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For: System and Method for Accomplishing Two-Factor User Authentication Using the Internet

- 1 1. A method of implementing token-based electronic security across multiple secure web sites, in which the user has a security token, comprising:
 - 3 storing unique token identification information, and the seed value of each token, in a
 - 4 security system;
 - 5 requiring the user, upon login to a secure web site, to enter at least the code generated by
 - 6 the user's token;
 - 7 passing the user's token code from the web site to the security system;
 - 8 using the security system to verify whether or not the user's token code was generated by
 - 9 the user's token; and
 - 10 passing the verification information from the security system to the web site, for use in
 - 11 web site security.
- 12 2. The method of claim 1 wherein the requiring step further requires the user to enter a user name and user password.
- 13 3. The method of claim 2 further comprising the step of:
 - 2 the web site verifying the user name and user password before passing the user's token
 - 3 code to the security system.
- 14 4. A method of accomplishing two-factor user authentication, comprising:
 - 2 providing two separate user authentication methods;
 - 3 enabling a user to communicate authentication data for both authentication methods to a
 - 4 first web site using the internet;

5 enabling the communication of at least some of the authentication data from the first web
6 site to a second web site using the internet; and

7 wherein both web sites are involved in user authentication using the authentication data.

1 5. The method of claim 4, wherein the first web site initially authenticates the user based on
2 the data relating to one of the authentication methods.

1 6. The method of claim 5, wherein the second web site completes user authentication based
2 on the data relating to the other authentication method.

1 7. The method of claim 6, wherein the first web site communicates with the second web site
2 only if the user is initially authenticated.

1 8. The method of claim 7, wherein the first web site communicates to the second web site at
2 least data relating to the other authentication method, and user-identification data.

1 9. The method of claim 4, wherein one authentication method employs a password.

1 10. The method of claim 4, wherein one authentication method employs a token.

1 11. The method of claim 10, wherein the token is hardware-based, and generates a code that
2 comprises at least some of the data for the authentication method.

1 12. The method of claim 11, wherein the token is a stand-alone, portable device.

1 13. The method of claim 11, wherein the token is USB-based and is accessed by a browser.

1 14. The method of claim 10, wherein the token is software-based, and generates a code that
2 comprises at least some of the data for the authentication method.

1 15. The method of claim 14, wherein the token comprises a browser plug-in.

1 16. The method of claim 4, wherein one authentication method employs a fixed complex
2 code.

1 17. The method of claim 16, wherein the fixed complex code comprises a public key
2 infrastructure.

1 18. The method of claim 4, wherein one authentication method is software-based.

1 19. The method of claim 4, wherein at least one user authentication method can be used
2 across multiple web sites.

1 20. The method of claim 10, wherein the token is embedded in a device such as a cell phone.